 [pdf\(1.06 MB\)](#)[full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: agent architecture, image processing and object tracking, multimodal pen and voice user interfaces, video analysis and annotation

4 First-class user-level threads



Brian D. Marsh, Michael L. Scott, Thomas J. LeBlanc, Evangelos P. Markatos
September 1991 **ACM SIGOPS Operating Systems Review , Proceedings of the thirteenth ACM symposium on Operating systems principles SOSP '91**, Volume 25 Issue 5

Publisher: ACM Press

Full text available:  [pdf\(1.53 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

It is often desirable, for reasons of clarity, portability, and efficiency, to write parallel programs in which the number of processes is independent of the number of available processors. Several modern operating systems support more than one process in an address space, but the overhead of creating and synchronizing kernel processes can be high. Many runtime environments implement lightweight processes (threads) in user space, but this approach usually results in second-class status for threa ...

5 Something from nothing: augmenting a paper-based work practice via multimodal interaction



David R. McGee, Philip R. Cohen, Lizhong Wu
April 2000 **Proceedings of DARE 2000 on Designing augmented reality environments DARE '00**

Publisher: ACM Press

Full text available:  [pdf\(175.28 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper, we describe *Rasa*: an environment designed to augment, rather than replace, the work habits of its users. These work habits include drawing on Post-it™ notes using a symbolic language. *Rasa* observes and understands this language, assigning meaning simultaneously to objects in both the physical and virtual worlds. With *Rasa*, users rollout a paper map, register it, and move the augmented objects from one place to another on it. Once an object is augmented, users can m ...

Keywords: augmented reality, invisible interfaces, mixed reality, multimodal interfaces, phicons, tangible interfaces, ubiquitous computing

6 A virtual circuit switch as the basis for distributed systems



G. W.R. Luderer, H. Che, W. T. Marshall
October 1981 **ACM SIGCOMM Computer Communication Review , Proceedings of the seventh symposium on Data communications SIGCOMM '81**, Volume 11 Issue 4

Publisher: ACM Press

Full text available:  [pdf\(1.00 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A communication system is presented which consists of a switch (Datakit [Fraser 1979]) with associated control and interface hardware and software. The switch offers virtual circuit service which is internally implemented through packet switching. The users of the communication system are operating systems; using our communication system, we have implemented a network of UNIX™ systems and a new distributed operating system

infrastructure-based secure proxy architecture to bridge the gap between the capabilities of Post-PC devices and the requirements of Internet ser ...

Keywords: internet, middleware, post-PC, security, transcoding

14 Coincident display using haptics and holographic video



Wendy Plesniak, Ravikanth Pappu

January 1998 **Proceedings of the SIGCHI conference on Human factors in computing systems CHI '98**

Publisher: ACM Press/Addison-Wesley Publishing Co.

Full text available: [pdf\(1.12 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: autostereoscopic display, coincident display, electro-holography, haptics, holography, offset display

15 Towards automatic evaluation of multimodal user interfaces



Sandrine Balbo, Joëlle Coutaz, Daniel Salber

February 1993 **Proceedings of the 1st international conference on Intelligent user interfaces IUI '93**

Publisher: ACM Press

Full text available: [pdf\(807.76 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

Keywords: Wizard of Oz, capture of behavioral data, multimodal user interface, user interface evaluation techniques

16 An impact analysis method for safety-critical user interface design



Julia Galliers, Alistair Sutcliffe, Shailey Minocha

December 1999 **ACM Transactions on Computer-Human Interaction (TOCHI)**, Volume 6 Issue 4

Publisher: ACM Press

Full text available: [pdf\(248.35 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

We describe a method of assessing the implications for human error on user interface design of safety-critical systems. In previous work we have proposed a taxonomy of influencing factors that contribute to error. In this article, components of the taxonomy are combined into a mathematical and causal model for error, represented as a Bayesian Belief Net (BBN). The BBN quantifies error influences arising from user knowledge, ability, and the task environment, combined with factors describing ...

Keywords: Bayesian belief networks, human error, safety-critical, scenario-based casual analysis

17 MOVE:: component groupware foundations for collaborative virtual environments




Pedro García, Oriol Montalà, Carles Pairet, Robert Rallo, Antonio Gómez Skarmeta

September 2002 **Proceedings of the 4th international conference on Collaborative virtual environments CVE '02**

Publisher: ACM Press

Full text available: Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index](#)

 [pdf\(607.34 KB\)](#)[terms](#)

The design of a Virtual Environment (VE) is a distributed problem of multi-user access to shared resources. Such problem requires careful design decisions in order to provide a seamless system infrastructure capable of supporting flexible interactions in the shared scenarios. The complexity of this domain has led to intricate software systems that provide ad-hoc solutions to specific problems. Furthermore, many of them have gone to a dead end, due to their non-extensible design and their lack of ...

Keywords: component groupware, distributed systems, frameworks, virtual environments

18 3D agent-based virtual communities



Zhisheng Huang, Anton Eliëns, Cees Visser

February 2002 **Proceeding of the seventh international conference on 3D Web technology Web3D '02**

Publisher: ACM Press

Full text available:  [pdf\(898.08 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper we propose an approach to 3D agent-based virtual communities in which autonomous agents are participants in VRML-based virtual worlds to enhance the interaction with users or serve as intelligent navigation assistants. In addition, an agent communication language (ACL) is designed as a high-level communication facility, in particular for the realization of shared objects in virtual communities. As a typical example of 3D agent-based virtual communities, a VRML-based multi-user socc ...

Keywords: ACL, VRML, agents, distributed logic programming, networked virtual environments, virtual community


19 Full Technical Papers: Multimodal event parsing for intelligent user interfaces



Will Fitzgerald, R. James Firby, Michael Hannemann

January 2003 **Proceedings of the 8th international conference on Intelligent user interfaces IUI '03**

Publisher: ACM Press

Full text available:  [pdf\(827.30 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Many intelligent interfaces must recognize patterns of user activity that cross a variety of different input channels. These multimodal interfaces offer significant challenges to both the designer and the software engineer. The designer needs a method of expressing interaction patterns that has the power to capture real use cases and a clear semantics. The software engineer needs a processing model that can identify the described interaction patterns efficiently while maintaining meaningful inte ...

Keywords: CERA, event recognition, multi-modal parsing

20 Creating tangible interfaces by augmenting physical objects with multimodal language



David R. McGee, Philip R. Cohen

January 2001 **Proceedings of the 6th international conference on Intelligent user interfaces IUI '01**

Publisher: ACM Press

Full text available:  [pdf\(560.34 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Rasa is a tangible augmented reality environment that digitally enhances the existing paper-based command and control capability in a military command post. By observing and understanding the users' speech, pen, and touch-based multimodal language, Rasa computationally augments the physical objects on a command post map, linking these items to digital representations of the same—for example, linking a paper map to the world and Post-itâ notes to military units. Herein, we give a thorough ac ...

Keywords: augmented reality, human factors, invisible interfaces, mixed reality, multimodal interfaces, tangible interfaces

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